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THE APPLICATION OF MICHURIN'S BIOLOGICAL METHODS IN HUNGARY

In Hungary, the principles and methods of Michurinian biology began to be recognized only after liberation. Aside from the study of Soviet literature in the field, Professor Gluschenko's visit in Hungary provided great impetus in this field.

Although, in view of their nature, Michurin's principles and methods can be successful only when applied dialectically, the initial tendency in Hungary was to apply Michurin's theses literally. The first steps, therefore, were purely formalistic. Professor Gluschenko indicated the proper direction to be taken in 1948, when during a visit in Hungary, he told the Hungarian plant improvers: "It is the task of Hungarian plant improvers not to ape the teachings of Michurin and Lysenko but to understand and apply them to the particular local conditions."

The results of plant improvement in 1951 show that Hungarian researchers had by that time mastered the correct application of the principles and methods of progressive agrobiology. They achieved important successes in producing new plant varieties and also in dveloping new plant improvement methods.

The results of Hungarian agrarian-scientific research may be summarized as follows:

Wheat

In wheat improvement, the free mass cross-breeding method is being applied successfully. The biological demands of Hungarian wheat varieties were determined, and the stratification method of U-130 spring wheat was worked out. By stratification lasting 20 days at 6-8 degrees centigrade, a 25-30-percent yield increase was achieved on large farms. During 1952, this method was employed on an area of 17,000 hectares, primarily on state farms and producers' cooperatives.

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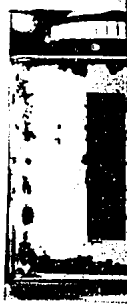

Corn

In corn improvement, similar successes were achieved by cross breeding. In the course of experiments lasting 2 years, all combinations of 19 Hungarian corn varieties were examined. In the unusually dry year of 1950, the best hybrids showed a 22-percent higher yield than pure varieties. In 1951, which had heavy precipitation, the average yield of the seven best hybrids was 11 percent above the average yield of all improved varieties. At certain experimental stations the results were even better. It is an important factor that in many cases, the hybrids ripened earlier than the orginal varieties, a fact which confirms Lysenko's theory. During 1952, 20 percent and in 1953, 50 percent of the area devoted to corn production will be planted in hybrid corn.

Fodder Beet

In fodder beet, the method of two successive crossings, based on Michurin's principles, showed excellent results. This work is linked with the name of one of the most important Hungarian plant improvers, Kurt Sedlmayr.

The essence of the above method is that a seed is produced from the best cross breed by a second crossing. This method increased the yield of the Beta rosa fodder beet by 15-20 percent above the yield of any other fodder beet variety in Hungary. The yield amounted to 10-13 carloads per hectare.

Sugar Beet

Four new Hungarian sugar-beet varieties, produced partly by hybridization, were developed. Before liberation, Hungary produced mostly foreign sugar-beet varieties. The new Hungarian varieties were superior to the best Western varieties.

Alfalfa

The old method, based on individual selection, was abandoned also in alfalfa improvement. Hybridization was based on careful analysis. The new alfalfa varieties yield 30-50 percent more than the old domestic varieties.

Potatoes

In potato improvement, summer planting has been introduced. Experiments carried out in many localities during 1951 resulted in a 70-percent increase in the Gul Baba variety.

Domesticated Plants

Cotton, rice, kenaf, and kok-sagyz have been domesticated in Hungary and cultivated on several thousand hectares. Undoubtedly, these achievements are due to the application of Michurin's biology.

Plant improvers are investigating the biological requirements of varieties by systematic research. They are applying the methods of systematic crossing and controlled growth. Their research is directed to practical purposes.

From various tomato varieties, genetically planned hybrids have been produced. Sugar as well as fodder beet varieties have also been hybridized.

This enumeration does not give a complete picture of the results achieved in Hungary by the methods of Michurinian biology, but even the small number of examples demonstrates the beneficial influence of Soviet science on Hungarian research in plant improvement.

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